



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/069,585

06/28/2002

Fumitoshi Yamashita

2002-0214A

3828

513

7590

08/12/2004

WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER

ELKASSABGI, HEBA

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 08/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/069,585

Applicant(s)

YAMASHITA ET AL.

Examiner

Heba Elkassabgi

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02/27/2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement (IDS) submitted on 02/27/2004 is being considered by the examiner. The submission is in compliance with the provisions of 37 CFR 1.97.

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 112

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims are generally narrative and indefinite, failing to conform to current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claim Objections

Applicant's cooperation is requested in reviewing the claim language for correct and proper English grammar.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim 1-3, 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada (JP 08084447) and further in view of Takayanagi et al. (JP 11018390).

Yamada discloses in figures 1-3 a small DC motor having an arc shaped permanent magnet (2 or 3) fixed in a frame (motor case 1). In which a magnet (2 or 3) is provided with an outer surface at both ends in a thrust direction that fits along an inner surface of a frame (1). A certain region in a middle part in the thrust direction of the magnet (2 or 3) at both ends in the circumferential direction where the frame (1) does not function as a back yoke (claim 1 and 9). In regards to claims 2 and 9, a pair of arc-shaped permanent magnets (2,3) opposing to each other are disposed in the frame (1) with the outer surfaces at both ends in the thrust direction fitting along the inner surface of the frame (1) and fixed at both ends in the circumferential direction using a spring (4,5). In regards to claim

Art Unit: 2834

5, a certain air gap as disclosed in figure 2 is provided between the outer surface of the arc-shaped permanent magnet (2,3) in the middle part of the thrust direction at both ends in the circumferential direction and the frame (1). However, Yamada does not teach that the frame is of a soft magnetic material.

Takayanagi et al. teaches of a small dc motor having a cylindrical housing (2) which is made of a ferromagnetic material with a magnet (1) attached to the inner circumferential face of the housing, in order to provide a magnetic configuration to reduce cogging of a small motor.

In regards to claim 3, the method of forming the device is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight. Furthermore, Yamada and Takayanagi et al. discloses the claimed invention except for the permanent magnets being molded from rare earth iron based melt spun flakes and a binder. It would have been obvious to one having ordinary skill in the art at the time the invention was made to choose a desired material for the permanent magnets, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416. Additionally, reference of Dickens Jr, (US Patent 5173206) with the combination of NPL document submitted by applicant of Herbst et al. *Rare Earth Iron Boron Materials: A New Era in Permanent Magnets* teach the material choice of the magnets.

In regards to claim 6, the method of forming the device, of which a curvature of the outer surfaces of the arc-shaped rare earth magnets in the

Art Unit: 2834

middle part in the thrust direction is made to be different from that of an outer surface at both ends in a thrust direction in a compression mold so that the soft-magnetic frame does not function as a back yoke at the region of the outer surface in the middle part in the thrust direction at both ends in the circumferential direction, is not germane to the issue of patentability of the device itself. Therefore, this limitation has not been given patentable weight.

In regards to claim 7, the functional recitation that the arc-shaped earth magnets oppose to each other exhibits different demagnetization curves at least unsaturated magnetization has not been given patentable weight because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth in 35 USC 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. In re Fuller, 1929 C.D. 172.

In regards to claim 8, the method of forming the device, of the once magnetizing a pair of arc-shaped rare earth magnets opposing to each other fixed along the inner surface of the soft-magnetic frame and then providing an initial demagnetization by heat so that a rate of demagnetization increases along with a distance from a center of magnetic pole towards the ends in the circumferential direction.

Since Yamada and Takayangi et al. are from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

Art Unit: 2834

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to choose a suitable material for the frame as taught by Takayangi et al. for the purpose discussed above.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada and Takayangi et al. as applied to claims 1-3 above, and further in view of Sakata (JP 06236807).

Yamada and Takayangi et al. do not teach a maximum thickness of the arc-shaped magnets to be 1 mm.

Sakata teaches an arch shaped magnet to have a thickness of 0.1 mm or larger and to be less than 1.0mm, in which the dimensional accuracy provides a good means for manufacturing.

Since Yamada, Takayangi et al., and Sakata are all from the same field of endeavor, the purpose disclosed by one inventor would have been recognized in the pertinent art of the others.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to choose a desired workable range for the dimension of the magnets as taught by Sakata. for the purpose discussed above.

Conclusion


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Heba Elkassabgi whose telephone number is (571) 272-2023. If attempts to reach the examiner by telephone are

Art Unit: 2834


unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Heba Y. Elkassabgi


United States Patent and Trademark Office
Patent Examiner
AU 2834

Class 310- Electrical Generator/Motor Structure
Class 290- Prime Mover Dynamo Plants
Phone (571) 272- 2023


BURTON S. MULLINS
PRIMARY EXAMINER